

Run-Length Encoding

A string with many repeated letters, for example, “AAAAAAAAAABBBB” can be denoted as “A 10 B 4”, which means 10 A’s in a row, then 4 B’s. This method of encoding is called Run-Length Encoding.

Write a program that takes in one line of string, encodes the string with Run-Length Encoding, and prints the output.

Input

One line of string, consisting of only English capital letters. (All test cases only consist of English capital letters.)

Output

Run-Length Encoded string of the input string.

Example

| Input (from keyboard) | Output (on screen) |
|------------------------------|--------------------|
| XXXXXXXXXXXXXXXXXXXXXXXXXXXX | X 3 Z 26 |
| ABBA | A 1 B 2 A 1 |